

Industry Action Plan Nigerian Cashews



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FOREWORD

Under the Rural and Agricultural Incomes with a Sustainable Environment (RAISE) IQC, Chemonics International and its Agricultural Development Assistance in Nigeria (ADAN) project are working with USAID/Nigeria and the Government of the Federal Republic of Nigeria (GON) to stimulate Nigeria's economic growth through increased competitiveness in the world market. A key component of this effort centers on determination of specific agricultural products with the greatest potential for increasing foreign exchange and employment. ADAN specifically targets increased agricultural commodity production and exports, and seeks to boost domestic sales as well through opportunistic 'fast track' activities, which are loosely based on development of networks and linkages to expedite trade.

The following industry action plan addresses the Nigerian cashew industry, one of five industry clusters selected during a stakeholder conference in Abuja, Nigeria in January 2002. Chemonics would like to take the opportunity to thank local consultants Dr. Adebisi Daramola, Aderemi Osijo and external consultants Grahame Dixie and Dr. Peter Jaeger, for their participation in the development of this report.

Project deliverables include Sub-sector Assessment Reports and Industry Action Plans (IAPs). The IAPs focus primarily on actions that the Nigerian private sector needs to undertake to improve the viability of these industry clusters, although government activities are also addressed. These plans are a supplement to the Subsector Assessment Reports, providing the reader with a quick overview of key market information from the Subsector Assessments, as well as actions to address the needs of the Nigerian industries. Those seeking additional background and analyses should refer to the accompanying assessment reports.

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EXECUTIVE SUMMARY

Nigerian stakeholders can potentially share in a long-term investment that can develop into a \$74 million industry in Nigeria over the next ten years, with an almost threefold increase in the industry's employment level. Changes in consumption patterns such as health concerns and novelty products have opened the door to cashew producers, processors, financiers, exporters, etc. who have the wherewithal to capitalize on opportunities afforded by a market growing steadily at 5% per annum.

There are two major global cashew markets to target: the raw nut market worth \$500 million, and the cashew kernel market worth \$1 billion. There are also niche markets, such as organic cashew, which receives a 25% premium over traditional cashew kernels. This industry business plan advances three objectives formulated to *transform Nigeria from a low-priced commodity producer to a reliable supplier and exporter of high quality cashew products (organics, kernels, etc.)*. The objectives of this industry action plan are to:

- 1.) Increase the dollar value of Nigeria's cashew exports, both raw nuts and kernels, from \$25 million to \$74 million within 10 years
- 2.) Improve Nigeria's export trade practices for cashews and other commodities
- 3.) Increase jobs, particularly in rural communities and among women.

The following targets are laid out according to a ten-year plan (2003-2012):

TABLE 1: CUMULATIVE INCOME GENERATION AND JOB CREATION

Criteria	Base yr (2003)	In 2 yrs (2005)	In 5 yrs (2008)	In 10 yrs (2012)
Traditional Kernel Export	\$6 M	\$8 M	\$19 M	\$38 M
Organic Kernel Export	\$ 0	\$3 M	\$6 M	\$15 M
Raw Nuts Export	\$17 M	\$17 M	\$19 M	\$21 M
Total	\$23 M	\$28 M	\$44 M	\$74 M
Total Job Creation (processing)	122, 000	153, 000	246, 000	375, 000

I. STRATEGIC ANALYSIS

A. Background

The Cashew industry in Nigeria faces the following problems:

- Bad trade practices and bad image, which results in low value for export
- Discounted price and low quality of raw nuts
- Export of non value-added product (raw nuts) and low export of value-added products (e.g. kernels, etc.), which results in low foreign earnings and loss of employment opportunities

Based on this analysis, the Chemonics team proposes the following long-term goal: **To transform Nigeria from a low-priced commodity producer to a reliable supplier and exporter of high quality cashew products (organics, kernels, etc.)**

B. Objectives

To achieve our goal, the specific objectives include:

- To increase the dollar value of Nigeria's cashew exports, both raw nuts and kernels, from \$25 million to \$74 million within 10 years
- To increase jobs, particularly in the rural communities. Employment from processing alone should increase from 122,000 to 375,000 within 10 years, with women comprising 60% of the workforce. Employment for production, post harvest handling and marketing will also increase
- To improve Nigeria's cashew export trade practices

C. The Market

The market can be broken down primarily into international and domestic markets. The international market is the main focus of this action plan, based on the genesis of the project, which is to increase export commodities. The plan does cover, however, local markets, as this is a key opportunity for Nigerian stakeholders, given that the majority of cashew is produced on small plots. The analysis below touches on both raw nuts and kernels.

Raw cashew nuts and kernels comprise the principle foundation for a market globally worth more than \$500 million at current raw cashew trading levels. At the cashew kernel level, the market is worth over \$1.0 billion. It is difficult to provide an exact assessment of global production; commonly quoted figures provided by the Food and Agriculture Organization (FAO, 2001) suggests a global output of 1.4 million tons per year. The key consideration, however, is the quantity commercialized since local consumption will vary annually. It is estimated that approximately 900,000 tons of raw cashew nuts enter the international market annually.

C.1. The International Market

This discussion is a summary of a more detailed market assessment for cashews contained in the Nigerian cashew assessment report.

C.1.a. Uses

The cashew kernel is on the world market with other edible nuts such as almonds, hazelnuts, walnuts, Brazil nuts, pecans, macadamia and peanuts. Although the sales of basic nut products, such as peanuts, have been static, the premium nut market, i.e. cashews, pistachios, etc., has been doing well. Cashews are among the most popular nuts, but sales are restricted because of their high price. Sixty percent of cashew kernels are consumed as snacks, while the remainder is supplied to the bakery and confectionary sectors.

C.1.b. Demand

The international cashew market is undergoing several changes mainly due to geo-political and economic factors as new consumers and suppliers enter the market.

US Market: North America accounts for well over half of world imports of cashews. With the increased marketing of organic, natural and health foods, and snack foods in general, demand for cashew in the USA is growing at the rate of 5% per annum.

World Market: The snack food market segment is growing due to new products such as organic foods (which commands 15 – 50% premium over normal prices), new consuming countries (Japan, Australia, Spain, Portugal), and increased demand in some minor markets (UK, Germany and Holland). Coupled with the new health food trends, demand for cashew is also expected to continue its growth of 5% per annum worldwide.

C.1.c. Prices

At origin, the trade in raw cashew nuts is secretive. There are no regularly published prices or records of prices paid over the season. Table 2 below, indicating prices for African raw cashew nuts, was obtained in Cochin, Southern India, where most of the raw nut trading is concentrated.

TABLE 2: INDICATIVE PRICES FOR RAW CASHEW NUTS (2001-2002 SEASON)

Origin	Quote US \$/ton (c&f Cochin)
Nigeria	420
Benin	525
Côte d'Ivoire	490
Guinea Bissau	No quote
Kenya	No quote
Tanzania DSM	530
Tanzania CDJKL	630
Mozambique	530
Madagascar	450

Source: Samsons Trading Co. Pvt. Ltd., India

Nigeria receives the lowest international price for raw nuts. The neighboring Republic of Benin receives a 20% premium. Peelability, small nuts, and poor post harvest handling are cited as contributing to this discount, although other reasons may come into play. Whatever the reasons, Nigeria has an opportunity to increase its prices to at least par with its West African neighbors.

Table 3 lists the current prices and several grades of internationally traded cashew kernels. The benchmark grade is W320 referring to a whole white kernel of a size that gives 320 kernels to a pound weight.

TABLE 3: CASHEW KERNEL PRICES AS AT JUNE 2002

Grade	Description	Price in US Dollars (\$)/lb*
W180	White whole kernels, 180 kernels/lb	3.30 – 3.40
W210	White whole kernels, 210 kernels/lb	2.75 – 2.80
W240	White whole kernels, 240 kernels/lb	2.30 – 2.35
W320	White whole kernels, 320 kernels/lb	1.80 – 1.85
W450	White whole kernels, 450 kernels/lb	1.45 – 1.55
SW320	Scorched white kernels, 320 kernels/lb	1.50 – 1.55
SW360	Scorched whites kernels, 360 kernels/lb	1.45
SSW	Scorched split wholes	1.15 – 1.25
FS	Fancy Splits	1.45 – 1.50
FB	Fancy Butts	1.40
LWP	Large white pieces	1.30
SS	Scorched splits	1.20 – 1.25
SB	Scorched butts	1.20
SP	Scorched pieces	0.70 – 0.80

Source: Samson's Trading Co. Pvt. Ltd., India

* FoB - Freight on Board

Prices for cashew kernels are currently low in US dollar terms – their lowest point in 17 years. However, the cashew kernel market is marked by a repeating pattern of increases and decreases. There is no indication of falling demand, rather the supply of kernels has increased significantly in the last two years and it may be some time before consumption catches up. In the meantime, there

are increasing disparities between prices for different grades as the larger grades of kernel remain in short supply while some of the inferior or even standard grades are over supplied. It is therefore a complex market to trade but the prospects for increasing consumption are good.

C.1.d. Stakeholders

Producers: Four producers, India, Brazil, Vietnam and Tanzania, dominate the output of raw cashew nuts. Other key areas are in West Africa and the Far East. Total global output is estimated to be 1.4 million tons per year.

Processors: India, Brazil and Vietnam are also the industry's primary processors, supplying over 90% of the kernels traded internationally. India has dominated the shelling of cashew nuts for most of the twentieth century, having developed the skills and technology for a manual system of processing; it has an annual throughput of some 500,000 tons per year.

The Brazilian cashew industry adopted mechanization with more success. Processing capacity in India, Brazil and Vietnam exceeds local production. The industries therefore import raw nuts when the economics of import, processing and export sales allow. Brazil rarely imports raw nuts; Vietnam is now importing raw nuts, while the Indian industries are dependent on imports to keep operating throughout the year. The raw nut trade is therefore focused on the Indian requirement.

The difficult and labor-intensive decortication process to remove the shell before consumption is not a process that can be carried out by the consumer; neither is it viable to shell cashew nuts in developed economies where labor costs are high. It is critical to understand that, although the shelling adds value to the product, the increase in value reflects the low yields of kernels at around 22 - 24% of the raw nuts input.

Attempts were made in Africa to mechanize the process since labor-based operations had not succeeded, but most of these mechanized plants failed. There are a few labor-based Nigerian processors focused on the export market, including Jof Ideal and ACET, both in Owo. Both have made substantial inroads into the US and UK markets by consistently providing high quality products. ACET is building a plant twice its current capacity, which should be operational by early 2003. Fugard Processing Industry in Jos, Plateau State was also mentioned as exporting to the Middle Eastern market. These factories contradict prevailing arguments that West Africa, particularly Nigeria, cannot compete in the international kernel market.

Raw Nut Buyers: India is the largest buyer of raw nuts followed by Vietnam and to a lesser extent Brazil. India has been increasing its raw nut imports at an average of 12.6% per annum and Africa supplies 90% of the raw nut requirement. West Africa has been the fastest growing source of raw nuts globally. Asia has declined in importance as a supplier as the processing capacity of Vietnam far outstrips supply of raw nuts, thus requiring the importation of raw nuts to keep processors in operation throughout the year. Vietnam has also become an importer of raw cashew nuts. Roughly estimated, 25-30% of West African exports are shipped to Vietnam. The majority of Nigerian raw nuts were exclusively sold to India; however, Vietnam now buys 40% of Nigeria's exports.

Cashew Kernel Buyers: The principal importers of cashew kernels are the USA and the EU. There is also significant consumption in China, Japan, Australia and the Middle East.

C.2 The Local Market

C.2.a. Demand

Roughly the same quantity of raw nuts that are exported are also processed into kernels, the majority for local consumption.

There is a local demand for cashew kernels and apples/fruits products. The local markets and supermarkets are full of Nigerian processed cashew kernels in various packages - recycled bottles, plastic containers - and with various seasonings – honey roasted, salt and pepper, curry, to name a few. This local and regional market is undersupplied.

The cashew apple also is very important in the local market. There is a thriving local demand for the apple – freshly picked from the tree with the nut attached. The nut is used to hold the apple and discarded once the apple is consumed. Although the apple provides immediate income to small-scale farmers, the practice of harvesting fruits before they fall naturally produces immature nuts that are of no commercial value.

C.2.b. Supply

The majority of Nigeria's production is considered "organic" – i.e. no chemical pesticides and/or fertilizers, but no production is certified organic. The actual hectareage of cashew under cultivation, as well as their output, is difficult to estimate, as there are no reliable published statistics. According to published Food and Agricultural Organization (FAO) figures for 2000 and 2001, Nigerian cashew production was reported to be 184,000 MT, a figure that local experts believe to be inflated. Using a combination of national statistics with export and local consumption figures, consultants estimate the actual production at approximately 80,000-100,000 MT. Benue, Kogi, Kwara, Oyo, Enugu, Abia, Anambra, Ekiti and Imo are the major producing states.

C.2.c. Prices

A slightly lower price kicks off the harvest season in January, when the matured fruits and nuts drop and harvesting begins. The price peaks around May when the harvest season draws to a close. During the 2002 season, prices started around N25/kg (\$.21/kg) during January/March and rose as high as N55/kg (\$.47/kg) at the season's end in May/June. Historical farm gate prices for raw cashew nuts are unrecorded. The current average buying price is estimated as N41/kg (\$.35/kg).

Local kernels vary in quality and grades from those tied in nylons to those packaged in tins and bottles, competing for and in most cases winning shelf space with the few imports. Prices also vary considerably from \$5-\$14/kg, depending on quality, packaging and marketing outlet.

C.2.d. Stakeholders

Producers: Between 60 –70% of Nigeria's cashew supply comes from small landholders.

Processors: The suppliers of cashew kernels to the local markets include factory processors (e.g. AgroPro; Cashew Nuts Processing Industry, Ibadan; Fugard, etc.), who supply to the supermarkets and restaurants/hotels while artisan companies, process and package the kernels in nylons and recycled bottles for sale at local markets and streets throughout Nigeria

Processors can be categorized by market outlet – export and local market. There are a few processors who export exclusively. The local market processors/suppliers are more diverse. There are those that just process to an intermediate stage, and then sell to finishers that roast, package and retail. Others perform all of the processing, packaging and distribution. These processors vary in size and sophistication from individual artisans to semi-automated factories.

The majority of processing plants in Nigeria employ the labor-intensive Indian processing technology, whereby a small-scale plant can process about 180 MT raw nuts per month during peak processing and requires about 550 employees. The mechanized Italian process has the disadvantage of producing discolored kernels, resulting from the dripping of CNSL during processing.

Although a few processors have successfully supplied the international market, they still need help to strengthen and grow their tiny market share. Major constraints include the high cost of capital and high staff turnover but, more important, the difficulty in purchasing and storing raw nuts to process throughout the year.

II. IMPLEMENTATION

This Industry Action Plan advocates four primary approaches to transforming Nigeria into a major cashew exporter.

A. Approaches

1. Establish a Commodity Business Bureau (CBB), which is private sector led, to provide business services and promote good trade practices within the Nigeria
2. Provide technical assistance to current and future producers and processors to increase volume and unit value of raw nuts and kernels
3. Expand cultivation and value-added processing in rural locations through extension and awareness activities
4. Penetrate the organic kernel market and explore market opportunities for CNSL, apples, etc.

Establishment of a commodity association is crucial to long-term sustainability. A Commodity Business Bureau (CBB) must be created as a private-sector entity to provide business services and establish and enforce a set of standards for cashews. The CBB will work in collaboration with government and multinational organizations. It will be the focal point of all cashew activities including those mentioned above, as well as market information, technical assistance, establishing business and financing linkages, strengthening associations and cooperatives, and developing standards and enforcement. Most important, it will work to improve Nigeria's image as a reliable supplier of high quality cashew products. Once created and functioning well, the CBB can be expanded to cover other commodities and standards.

B. Activities

The chart which follows shows the main activities in this project, organized according to the project objectives:

TABLE 4: MAIN ACTIVITIES, TIME FRAME, BENCHMARKS

ACTIVITY	YEARS
Industry Stakeholders' Association/Organization responsible	
a. Create the CBB with members from all sectors of the industry	1-1
b. Obtain adequate financing and management for the CBB	1-1
c. Help develop working relationships between CBB and related public and private-sector organizations	1-3
d. Help the CBB prepare and execute operational plans	1-5
Benchmark: CBB set up and operating effectively, end of year 1	
Cashew production	
a. Identify farmers to begin or increase production	1-5
b. Insure availability of financing at acceptable rate of interest	1-10

c. Replant fields with seeds from Ghana and Brazil	1-3
d. Provide agricultural extension and training of farmers	2-8
e. Select and develop skills of a Nigerian organic certifying agency	1-2
f. Improve post-harvest handling and grading, to various standards	1-5
Benchmark: Producers meeting criteria a-e in Table III	
Processing	
a. Increase value-added processing in rural areas	1-5
a. Make financing and technical assistance available to processors	1-10
b. Help processors obtain quality management certification	1-4
c. Provide information on uses of cashew apples and CNSL	2-5
Benchmark: Processors meeting criteria f-h in Table III	
Marketing and exporting	
a. Carry out campaign to increase local use of cashew apples and CNSL	2-4
b. Provide market information and contacts to exporters of raw cashews	1-10
c. Give market information and contacts (regular and organic) to processors	1-10
Benchmark: Exporters meeting criteria i-j in Table III	
Government participation	
a. Request import duty preferences for supplies and equipment to produce and process cashews	1-2
b. Present plan to improve roads needed by the cashew industry	2-2
c. Encourage private transporters to improve service to the industry	2-3
d. Encourage administrators of Export Expansion Grants and the Export Development Fund to work actively with the cashew industry	1-2
e. Study impact on the industry of specific changes in fiscal and monetary policies	2-3
f. Encourage NEPC officials to pay special attention to the industry	2-8
Benchmark: Relevant agencies cooperating to meet cashew industry goals	
Evaluation and feedback	
a. Develop a monitoring and evaluation system for this plan	1
b. Assign responsibilities and monitor as scheduled	1-10
Benchmark: Monitoring and feedback system working effectively	

B.1. The Commodity Business Bureau (CBB)

The Commodity Business Bureau (CBB) will be composed of stakeholders in the production, processing and marketing of cashews and will be given primary responsibility for carrying out this plan. The CBB will be assisted in its work by public and private sector organizations (cooperatives, etc.), which it will help to strengthen. The steps in organizing the CBB will be as follows:

1. Convene a stakeholders' forum to begin getting commitments to establish the CBB
2. Establish a Steering Board with representatives from all sectors of the industry to, *inter-alia*:
 - Develop services to members such as market information, Internet browsing and market and financial linkages, and determine the fees for these services
 - Create standards for cashew products including nuts and kernels, based on standards now used in the industry
 - Establish a mechanism to measure and grade the nuts and enforce the standards
 - Provide technical assistance to help producers and processors continue to meet the standards
 - Promote the principles of fair trade among the stakeholders
 - Assure sustainability of the CBB
 - Monitor compliance with standards and the impact of the CBB's services
3. Set up an office, recruit staff and begin operation
4. Eventually expand the CBB's mandate to include other commodities, services and standards

B.2. Cashew Production

Cashew production will be more than doubled in ten years, mainly through identifying and encouraging farmers to grow cashews and through agricultural extension and training; provision of financing, and replanting with seeds from Ghana and Brazil. This will be done in cooperation with selected government organizations. Agricultural extension will be focused on improving the yields, quality, and average size of kernels and on post-harvest handling and grading, including standards for the EU, U.S. and other market countries.

This work will include the following:

- Identify implementing partners (trade groups, cooperatives, NGOs, consultants, buyers, exporters, bankers, etc.) and initial regions of operation
- Institutional diagnosis of cashew stakeholders including producers, processors and exporters
- Interview opinion leaders and traditional leaders at the village/community level to identify areas for capacity building, especially in production, post-harvest techniques/handling and processing
- In collaboration with public and private agencies, acquire at least 10,000 hectares of land per year for ten years
- In meetings, disseminate information about the benefits and correct methods of cashew production and processing
- Expand technical assistance to increase awareness of cashew benefits and increase processing at the village level

- Identify private sector groups and individuals to cultivate the land acquired and help to clarify land ownership and to clear and maintain the land
- Work out methods of financing imports of, and importing, seeds of dwarf cashew varieties from Ghana, Brazil and other countries, and work with reputable seed companies to sell the imported seeds
- Provide technical assistance in planting the new seeds
- Develop methods and materials for training to improve production, post-harvest handling and processing
- Introduce new and improved practices in production, post-harvest handling and processing to a selected target group
- Expand technical assistance to other localities, regions and groups

The industry should emphasize organic production and help farmers by identifying and working with a Nigerian organic certifying agency.

- Initial farms receive organic certification and ship the first certified organic kernels
- Transfer the organic pilot project to the CBB
- Replicate the project with other cashew producers and processors
- Begin to train and certify Nigerian organic certifiers

B.3. Processing

The following steps will be taken to improve processing of cashew nuts in Nigeria and increase the percentage of Nigerian cashews being processed from 40% to 70% in ten years:

- Help producers' organizations to begin or increase value-added processing
- Increase processing capacity by improving existing processing plants and providing incentives for the establishment of new ones
- Provide assistance with financing, and storage to help the processing and packaging factories maintain a constant supply of raw material
- Provide technical assistance in processing and plant management
- Help processors obtain quality management certification, as needed, to facilitate exporting to the developed countries
- Develop an industry business plan for cashew applies and other products, including CNSL

B.4. Marketing and Exporting

The following actions will be taken to improve marketing and exporting of cashew nuts:

- Develop and help finance a campaign to increase local consumption of cashew nuts and by-products
- Develop networking and create market linkages among producers, processors and exporters
- Advise local exporters on maximizing returns from exports of raw cashews, including sales to "fair trade" importers

- Advise processors on maximizing returns from exports of cashew kernels, especially organic kernels which may receive a 25% price premium
- Help exporters identify, contact and negotiate with foreign buyers, especially in the USA and the EU, with a focus on organic cashews and roasted kernels
- Help exporters counteract the negative image of Nigeria by selling on open account, which requires careful selection of buyers and credit checks
- Disseminate information about services of the Nigerian Export-Import Bank (NEXIM)
- Provide technical assistance in packaging, packing and transportation to reduce cost and improve product condition on arrival
- Actively seek uses, users and foreign buyers for CNSL
- Spot check export shipments to verify that the quantity and quality are as promised to the foreign importer

B.5. Government Participation

Government participation should consist of the following activities:

- Take measures to reduce costs of materials and equipment for cashew production and processing
- Improve roads and increase transport options from producing areas to processing plants and from there to the port
- Continue streamlining port operations to reduce cost and pilferage
- Accelerate delivery of Duty Credit Certificates in the Export Expansion Grant Scheme and streamline procedures of the Export Development Fund Scheme
- Encourage more favorable monetary and fiscal policies
- Assist with export promotion in cooperation with the Nigerian Export Promotion Council (NEPC)

B.6. Evaluation and Feedback

The new Commodity Business Bureau will carry out measurement of results. Success in this program will be measured by the following:

- Employment in cashew production in Nigeria
- Number of women employed
- Tons of raw cashews produced
- Agricultural yield
- Percent of raw cashews that are organic
- Percent of production that is processed in Nigeria
- Kernel recovery
- Percent whole to all kernels
- Tons of cashews exported
- Export earnings

Evaluation Criteria and Projections

TABLE 5: EVALUATION CRITERIA AND PROJECTIONS

CRITERION	BASE YEAR (2003)	SHORT-TERM (2005)	MEDIUM-TERM (2008)	LONG-TERM (2012)
a. Employment in production	122, 000	153, 000	246, 000	375, 000
b. Number of women employed	78,000	97,000	157,000	239,000
c. Tons Raw Nuts produced	90,000	100,000	130,000	170,000
e. Percent of raw nuts certified organic	0	10 22	33 20	50 26
f. Percent of raw nuts processed	40	50	60	70
g. Percent of kernels recovery from processing	18	19	22	25
h. % whole to all kernels¹	50	60	70	80
j. Export earnings	\$23 million	\$28 million	\$44 million	\$74 million

¹ The base year figure would need to be verified with baseline studies.

Annex I. Financial Impact

There are no detailed statistics on cashew production, processing and exporting. The figures are local experts' estimates from interviews with the private sector, local exporters and limited available data.

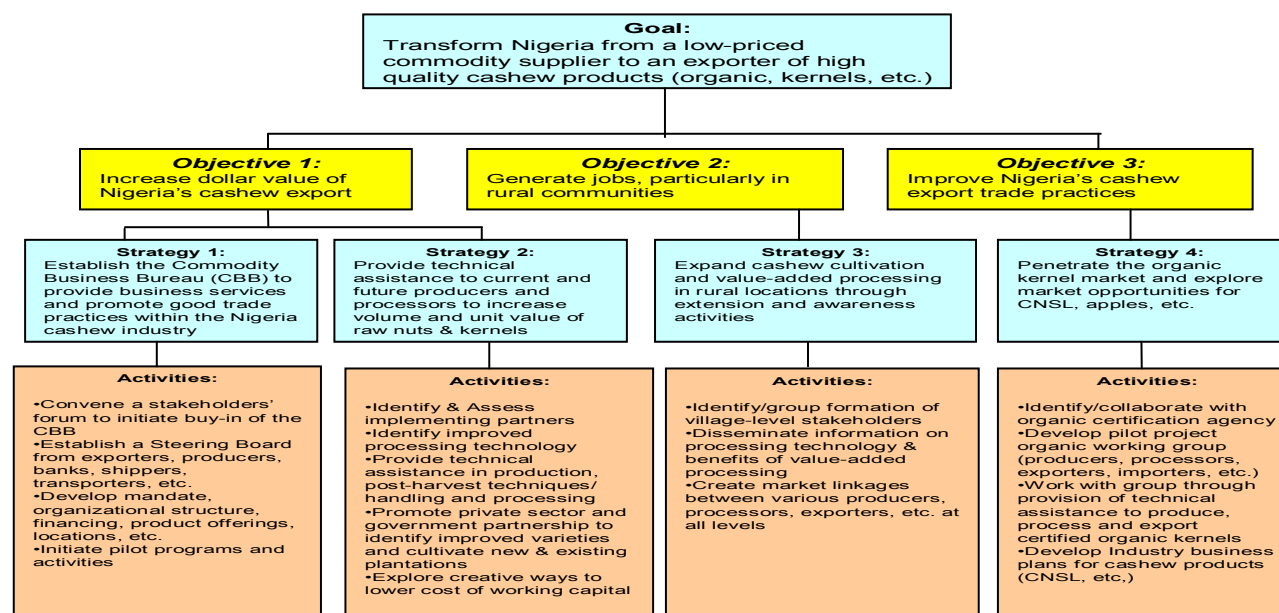
Implementing this strategy requires several initiatives, as discussed above. In order to determine the financial impact of this strategy, the team reviewed pursuing organic certification, increasing the value (i.e. price) of raw nuts through improved post harvest handling, and increasing the production and export of traditional kernels. Although Nigeria has a substantial production base – 80,000 - 100,000 tons - it is too low to meet all of the processing (i.e., kernel) targets, considering that exports of raw nuts will continue for some time. A ban on raw nuts exports would be difficult to enforce due to the practice in neighbouring countries of offering premium prices.

To develop the resources needed to pursue this ambitious strategy, we suggest a minimum production increase of 10,000 hectares per year of improved dwarf planting material for the next ten years. This aggressive approach will provide enough raw materials for producing both organic and traditional cashew kernels. Since cashew, even with improved, early-yielding dwarf planting materials, is a long-term investment (payback period of 6 years, IRR 13%), we suggest creative ways to foster and encourage increase plantings, including innovative government/private sector partnerships and incentives.

The financial returns for processing kernels for export are much more favourable. With a \$320,000 investment in plant and equipment, processors can achieve a payback period of 4 years for traditional kernels with an IRR of 20%. Although current processors are not close, there is still the potential. Support, particularly in the area of financing, is needed.

Again, these are preliminary figures and we recommend that individual investors perform a thorough feasibility study focused on their particular situation.

Annex II. Implementation Framework



Annex III. Risks and Assumptions

The following are some assumptions on which elements of this plan are based:

- Farmers will be willing to increase their production of high-quality cashews
- Several production areas are organic and can easily be certified
- Nigeria can develop processing techniques equal to or better than those used in other countries
- International demand will increase along with supply so that prices remain fairly steady
- Cashew production and processing do not have significant environmental impacts that cannot be ameliorated
- Both private and public sector organizations will cooperate as needed in the implementation of this plan.

The following are some possible risks, and how they might be mitigated:

TABLE 6: RISK FACTORS AND MITIGATING ACTIONS

RISK FACTOR	MITIGATING ACTION
Agricultural production reduced due to crop diseases	CBB and GON extension services to help farmers prevent and deal with diseases
Organic certification not obtainable due to chemical drift or other factors	Work with certifying agency on careful selection of initial areas
Farmers won't sell to processors due to higher prices from smugglers or exporters	Help processors with marketing so they can sell well and thus afford to pay well
Low world prices due to competition from Vietnam and other countries	Maximize efficiency to keep costs down and explore joint promotion with other countries to increase world demand
Reaction by competitors to keep entrants from gaining market share	Strategic alliances with other new entrants or current competitors
Nigerian Government unwilling or unable to perform the functions required of it	Work through channels to secure high priority for this development plan
The CBB does not obtain financial and/or other support required to implement the plan	Work through channels to secure high priority for this development plan